

REMARKS

This responds to the Office Action mailed on July 10, 2008.

No claims are amended, canceled, or are added; as a result, claims 1, 3, and 7-8 remain pending in this application.

§103 Rejection of the Claims

Claims 1, 3, 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over “Applicant’s Admitted Prior Art” in view of Yoshihara et al. (U.S. 2001/0008300), Lau (U.S. 2002/0170901) and Wang et al. (U.S. 6,258,626). Applicants respectfully traverse the rejection as failing to provide a rationale sufficient to make a *prima facie* showing of obviousness for the reasons stated below.

Applicant accepts, for the purpose of argument, that the Office Action’s characterization of the art in the present application “shows most aspects of the instant invention except ‘wherein the film includes a tacky film’ and ‘curing the underfill material and after beginning curing the underfill material and removing the film, curing includes heating the package in a curing oven under conditions to cause the tacky film to release from the flip-chip assembly.’” It is however, noted that the differences the Office Action concedes to exist between what is claim 1 and Fig 2 of the so-called AAPA are critical, especially the “curing the underfill material and after beginning curing the underfill material and removing the film, curing includes heating the package in a curing oven under conditions to cause the tacky film to release from the flip-chip assembly.”

Applicant denies, however that “Fig. 2C of Yoshihara shows a (sic) adhesive (tacky) film over the semiconductor assembly 1” that one of ordinary skill in the art at the time that the invention was made would be likely to incorporate into the method claimed in claim 1. There is nothing shown in Yoshihara suggesting curing underfill material and “after beginning curing the underfill material and removing the film, curing includes heating the package in a curing oven under conditions to cause the tacky film to release from the flip-chip assembly.” Yoshihara does not even show releasing an adhesive sheet by heating. Instead it reduces the adhesion of the adhesive by UV irradiation (Abstract).

The Office Action then concedes that the proposed combination of AAPA and Yoshihara fails to show “curing the underfill material and after beginning curing the underfill material, removing the film, wherein after beginning curing the underfill material and removing the film, curing includes heating the package under conditions to cause the tacky film to release from the flip-chip assembly” but proposes to provide that limitation by combining Lau and Wang. More specifically, the Office Action cites Lau [0055] as teaching that “the adhesive cloud (sic ‘could?’) be removed at less than 200° C” and cites Wang as disclosing “an under-fill curing process in the oven including a pre-curing at 120 C and post-curing at 150 C” (citing Wang col. 1, lines 31-36).

As to the Office Action’s reliance upon Lau, it is noted that Lau was cited merely for its statement that adhesively secured multi-chip modules can be removed from a substrate at temperatures less than 200 degrees C.

As to the Office Action’s reliance upon Wang, it is at Col 1, lines 48-49 that 120 degree C precure and 150 degree C postcure temperatures are referred to.

Neither Yoshihara nor Lau nor Wang relate to a package forming method as claimed in claim 1 using a tacky film released by heating the package and the film during curing. Lau and Wang were apparently cited merely for their reference to the fact that curing of certain adhesives can occur at temperatures below that at which the adhesives release their bond.

Thus the Examiner’s rationale for proposing to combine what the Examiner contends that Applicants have admitted to be prior art, with Yoshihara, Lau and Wang, fails to account for all of the limitations of claim 1 so that the rejection fails to make a *prima facie* showing of obviousness. The rejection of dependent claims 3, 7 and 8, which are dependent upon claim 1, also fails to make a *prima facie* showing of obviousness for at least the same reasons as shown with regard to claim 1.

Reconsideration and allowance of the rejection of claims 1, 3 7 and 8 is respectfully requested.

CONCLUSION

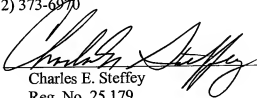
Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (612) 373-6970 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 373-6970

By


Charles E. Steffey
Reg. No. 25,179